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ILLUSTRATED CATALOGUE OF

THE

CINCINNATI
CORRUGATING
COMPANY.

SUPERIOR
CORRUGATED
AND
OTHER SHEET
METAL
BUILDING MATERIAL.

WE CONTROL THE ENTIRE
PRODUCT OF THE PIQUA ROLLING MILL

PIQUA, OHIO. U.S.A.

THE FIRST CORRUGATING COMPANY IN AMERICA

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

PHILADELPHIA

WHAT WE MAKE.

CORRUGATED ROOFING,

CORRUGATED SIDING,

CORRUGATED CEILING,

CORRUGATED ARCHES.

CORRUGATED LATH,

CORRUGATED SHUTTERS,

CORRUGATED DOORS.

V CRIMP IRON ROOFING,

STANDING SEAM PLAIN ROOFING,

ROLL AND CAP STEEL ROOFING,

OUTCALT ELASTIC JOINT ROOFING.

METALLIC WEATHER BOARDS,

RIDGE CAPPING,

BEADED METALLIC CEILING.

ROOFING TIN PLATES,

JUNIATA GALVANIZED SHEETS, } "PIQUA" BRAND.

ESTIMATES FURNISHED

On Metallic Material for Buildings, including

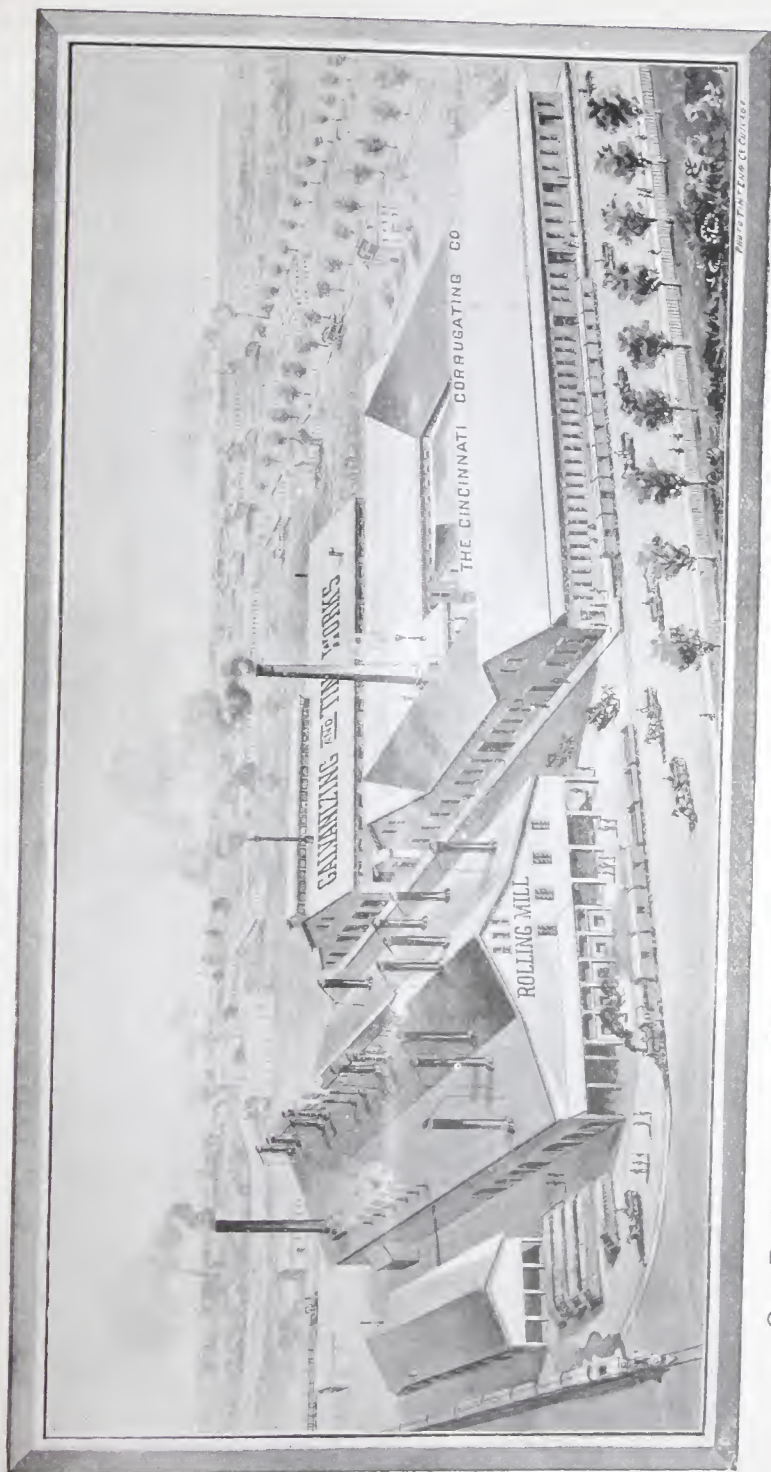
CORNICES, GUTTERS, CONDUCTOR PIPE, ETC.

IRON OR STEEL.

PAINTED.

GALVANIZED.

STUTTGART ALBANY
ALBANY ALBANY



Our Factory, Rolling Mill, Galvanizing Works, Tin Plate Works, and General Offices.

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SUPERIOR.

WE ARE LEADERS.



Gold Medal of the First Class Awarded in 1885 by the First World's Industrial and Cotton Centennial Exposition at New Orleans,

— TO —

THE CINCINNATI CORRUGATING COMPANY.

Our Stock is never less than 1,000 Tons. This Insures Prompt Shipments.

THE CINCINNATI CORRUGATING CO.

GENERAL OFFICES,

ROLLING MILLS, GALVANIZING WORKS, TIN PLATE WORKS AND FACTORY,
PIQUA, OHIO, U. S. A.

JULY, 1893.

To Our Customers and the Trade Generally:

Over three and one-half years ago it became evident that our buildings on Eggleston Avenue, CINCINNATI, although containing 30,000 square feet of floor surface, were too limited for our increasing business, which has always been the most extensive in its line in the United States; hence we were compelled to seek a more available location.

After comparing the advantages of several localities, we decided in favor of PIQUA, OHIO, a thriving manufacturing city, most eligibly situated, about eighty miles north of CINCINNATI.

The removal and re-establishment of our plant at this place was accomplished in due time, and we now enjoy facilities unequaled heretofore in our line of business, and unsurpassed at the present time.

In our new location we have the most modern Rolling Mills, operated by Natural Gas, and under our sole control; the most improved processes of annealing, forming and painting our iron and steel sheets; machinery for grinding and mixing our paints; ample buildings and grounds, together with unusually good railroad connections for obtaining the lowest freight rates, and quick shipments. We have side tracks running into our factory connecting us direct with all roads East and West, North and South, thus affording us excellent shipping facilities.

The control of the output of the Rolling Mills, both in quality and for quick delivery, will enable us to eclipse our former record of superior quality and prompt shipments in furnishing our patrons with reliable, durable and satisfactory Corrugated and Plain Roofings, Sidings, etc.

We last year added the manufacture of Roofing Tin Plates of the already famous "PIQUA" brand.

We have doubled the capacity of our Galvanizing Works during the past year, so that now we are in a position to meet all the demands of the trade for Juniata Galvanized Sheet Iron.

We trust that we may be favored with a continuance of your correspondence and patronage, addressing all communications to

Yours truly,

THE CINCINNATI CORRUGATING CO.,

PIQUA, OHIO, U. S. A.

10 88-B 13476 102

Corrugated Sheet Metal

In England and America has been in use longer than any other form for Roofing, Siding, Ceiling, etc. Whenever merit, rather than mere first cost is considered, it has been a preferred form of covering for fifty years or more. Hence in the U. S. Government Buildings, Public Buildings generally, by Railroad Companies, and by the more permanent class of Builders, Corrugated Iron Roofing, Siding, Ceilings, Shutters, Doors, Lath, etc., have been used for many years.

Its superior architectural appearance, as well as its durability and effectiveness, induces this result.

The Corrugated is the strongest known form of sheet metal, and imparts much strength to the structure to which it is attached, by its lineal rigidity. We know of Corrugated Iron roofs put on over twenty-five years ago which are now apparently as good as ever.

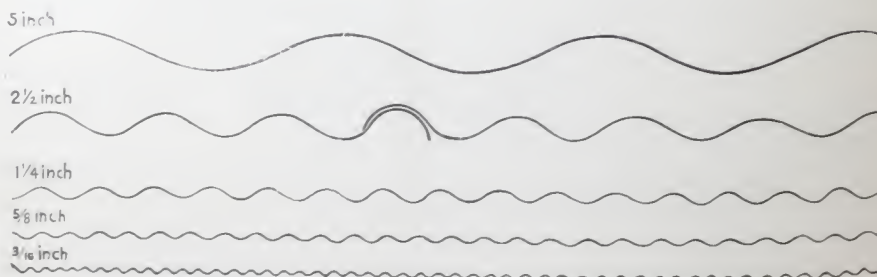
To build up our business to its present considerable proportions we have been compelled to raise the standard of its manufacture to the highest perfection in quality, of both material and workmanship.

We use only re-worked, box-annealed iron and steel, all re-sheared before forming, the corrugating being done by stamping in dies instead of by rolling. This gives our sheets their superior exactness so essential for tight Roofing and Siding, for economy in applying, and for uniform excellence.

Our aim now is to popularize Corrugated Sheet Metal on its merits by selling it for general use to meet prices of manufacturers of even inferior covering materials.

Corrugated Iron does not rattle from expansion, contraction or wind, nor sag down or buckle.

We make Six Sizes of Corrugations: 5 inch, 3 inch, $2\frac{1}{2}$, $1\frac{1}{4}$, $\frac{5}{8}$ and $\frac{3}{16}$ inches wide, of either Painted or Galvanized Iron. The following engraving shows their relative sizes:



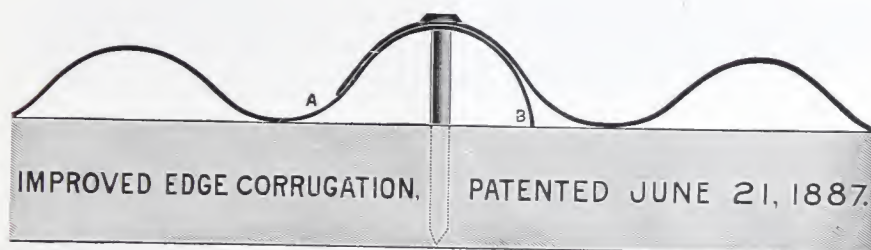
We offer the Best at the Price of the Cheapest.

COPYRIGHTED.

Patent Edge Corrugation.

We particularly invite attention to the fact that we have perfected machinery whereby we furnish all our regular $2\frac{1}{2}$ inch wide Corrugated Iron Roofing and Siding, with our PATENT EDGE CORRUGATIONS, $\frac{1}{4}$ inch higher than those in the interior of the sheets, and of the improved form shown in Figs. 1, 2 and 3.

Fig. 1.



These Corrugations are made so that the outer edges are nearly vertical instead of flaring, as is usual with sheets corrugated with all other processes.

THE ADVANTAGES OF THIS IMPROVEMENT ARE:

First, that the nails used in fastening can only be driven near the *tops* of the highest corrugations, and it is impossible for rain to leak through, as the nail heads thus cover the holes best, and water drains away from nails promptly.

Second, that the flange of the outside lapped corrugation of this style hugs tightly, while the ordinary Roll Corrugated Iron is only held tight at the nails, and flares open between, admitting rain freely.

With our improved machinery we make a perfect sheet of Corrugated Iron, guaranteed uniformly straight, free from holes, warps and imperfections.

Such a Corrugated Sheet as we make can not be made by any other manufacturer, as **we are Sole Licensees, and hereby warn all infringers.**

With the Patent Edge Corrugation, a lap of one corrugation at sides of sheets is more effective than the lap of two corrugations of other makers.

Each sheet is sheared on ends and sides, making it perfectly square. Every corrugation is perfect, having a uniform depth the entire length of sheet.

Every corrugation is a channel in itself, carrying off its share of water quickly—not allowing it to remain and flood the joints.

We are the Only Makers of Stamped Corrugated Sheets.

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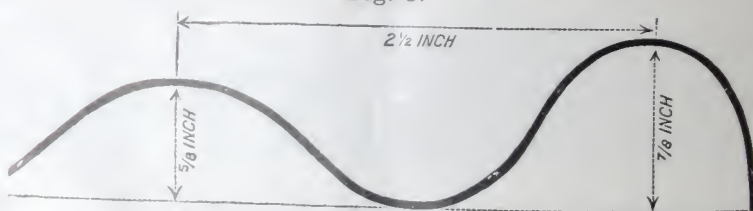
OUR SPECIALTY.

Fig. 2.



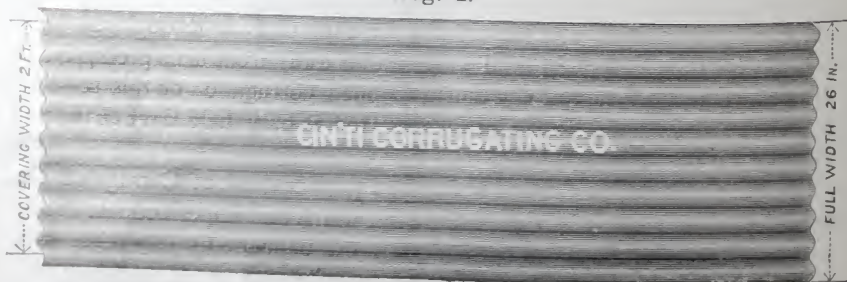
Shows our Improved Patent Edge Corrugations $2\frac{1}{2}$ inches wide, with our method of nailing—through *tops* of Corrugations. See also Figs. 1, 3 and 4.

Fig. 3.



Shows full size of $2\frac{1}{2}$ inch Corrugations; one interior Corrugation, $\frac{5}{8}$ inch high, and Patent Edge Corrugation, $\frac{1}{4}$ inch higher or $\frac{7}{8}$ inch.

Fig. 4.



Shows our Corrugated Roofing Sheets of 10 Corrugations, each $2\frac{1}{2}$ inches wide by $\frac{5}{8}$ inch high: The edge Corrugations are $\frac{7}{8}$ inch high instead of $\frac{5}{8}$. Regular lengths of sheets in stock, 5, 6, 7, $7\frac{1}{2}$, 8, 9 and 10 feet. When lengths are not specified, we always ship 8 foot sheets. All our Corrugated sheets, of all gauges, have a uniform width. Full width is 26 inches; Covering width, 24 inches.

Regular Lengths, 5, 6, 7, $7\frac{1}{2}$, 8, 9 and 10 feet. Widths, 26 inches.

Fig. 5.

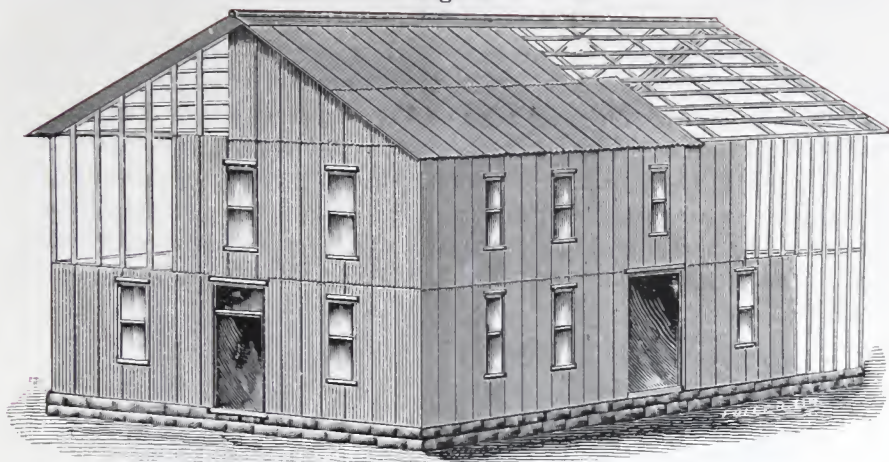


Fig. 5, above, shows a Ridge Roofed Frame Structure of simplest form, in process of being covered with our Corrugated Iron, and also shows application of Round Ridge Cap, more fully illustrated by Fig. 12.

When this iron is attached directly to studding or rafters which run in the same direction the Corrugations do, the distance between the centers of the studding or rafters must be 24 inches. However, this method of applying is used only on the cheapest buildings; *it is always preferable* to apply the Iron Roofing as well as Siding to sheathing.

See instructions for laying Corrugated Iron, pages 14, 15 and 16.

It is our custom, and that of the trade generally, in selling by the square, to furnish a number of sheets, the total superficial measurement of which equals 100 square feet; that is, without allowance for laps.

This is especially proper in Corrugated Iron, which is used for so many purposes, varying so much in the amount of end lap required, or for some uses requiring no lapping at all.

On the following page we furnish data by which anyone can estimate very closely how many squares of Corrugated Iron will be required for covering a given space, but if anyone desiring an estimate will send us a sketch like Fig. 34, stating thereon accurate dimensions in detail, we will take pleasure in submitting a proposition for such Roofing, etc., as they may specify, complete, delivered on board cars here, stating the freight to destination.

We usually paint all our Roofings, etc., with best Iron Oxide Red Paint, but have facilities for painting with other colors when they are desired by our customers.

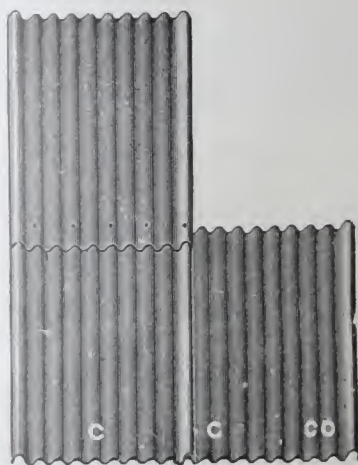
Allow Corrugated Roofing three inches pitch, or more to the foot.

Rules for Estimating Quantities of 2½ Inch Corrugated Sheets.

For Roofing.—Select such of our regular lengths of sheets as will cover your rafters most economically (allowing 3 inches end laps, and 2 to 4 inches projection at eaves). First add together the lengths of sheets selected; then multiply their total length by the length of ridge, adding 7 per cent. for side laps.

For Siding.—Where the sides of a building are no higher than the length of one sheet, 7 per cent. added to the superficial area will give the number of squares of Corrugated Iron required to cover; when there are two or more rows of sheets in height, add 8 to 10 per cent., varying with amount lapped at ends of sheets.

Fig. 6.



Regular size, 32 inches long, 26 inches wide, covering 2 feet.

Fig. 6 shows our **Corrugated Elevator Siding**, sheets, 2½ inch Corrugations, for sides of Grain Elevators or any buildings liable to much settling.

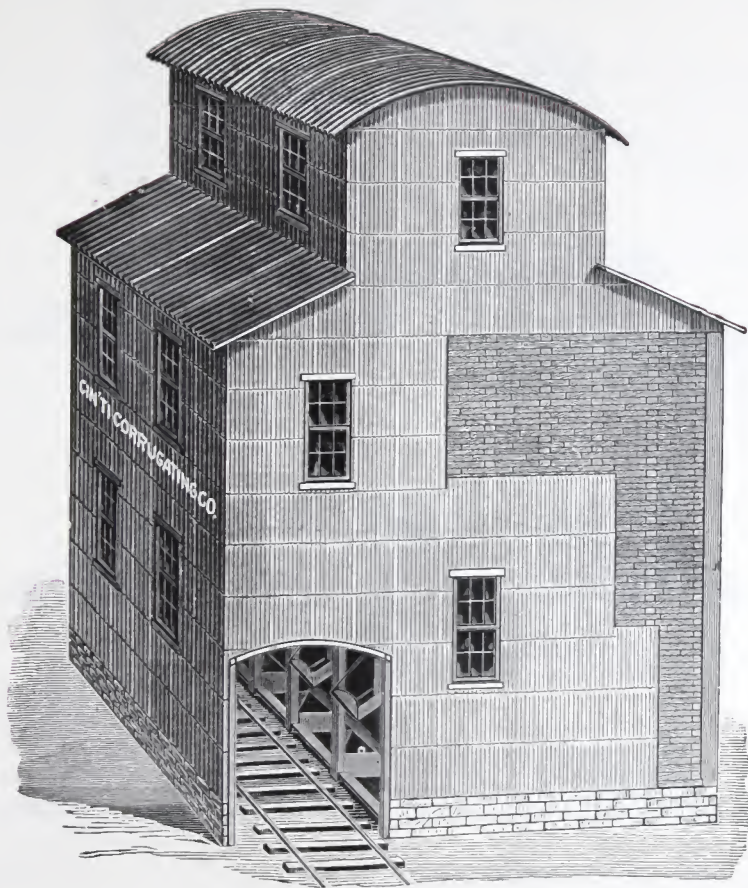
These sheets are made of our regular widths (covering 2 feet when lapped one corrugation at sides), and usually 32 inches long, so they need be nailed only on the lower end, our Patent Edge Corrugations stiffening the sheets so much that nailing at sides is unnecessary.

Each sheet is nailed 2 inches above the edge, and there is an inch lap, allowing the sheet to slide an inch, before the nails, by which it is attached, impinge on the lower sheet; each sheet, in fact, acts independently.

The sheets being applied with one inch end lap, and the nails being one inch above the upper edge of the lower sheet, the sheets are enabled to slide one inch in 32 inches, as the sides of the elevator settle, and will not buckle or draw the nails.

Use 2½ inch Corrugation for Curved Sheets.

Fig. 7.



Shows application of our Curved and Straight Corrugated Iron Roofing and Siding to an elevator, mill, or railroad depot.

This makes a substantial, durable, fire-proof covering of the finest architectural appearance, with which no plain sheets can at all compare.

To simplify our quotations, we will be pleased to make estimates on enough Roofing and Siding materials to cover an elevator or other building complete, delivered f. o. b. cars your city, if furnished with plans or drawings giving dimensions and specifications for all details.

Reversed Ends of Roll Corrugated Sheets can not match,—Ours do.

Ridge Coverings.

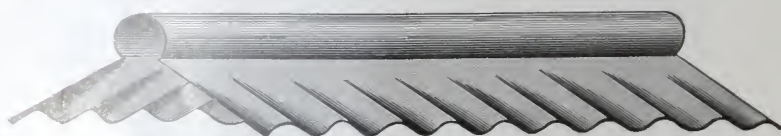
Ridge Cap of some pattern is requisite for covering ridges of roofs to make a water-proof joint; it also produces a finished appearance to the roof. (See Fig. 12.) We make several styles of Capping, of both Painted and Galvanized Iron, as illustrated below.

Fig. 8.



Illustrates our **Round Ridge Cap**. Regular lengths, 6 feet.

Fig. 9.



Represents our **Corrugated Ridge Cap**. Regular lengths cover 2 feet.

Fig. 10.



Shows our **Angle Ridge Cap**. Regular lengths, 6 feet. This style is less expensive but equally as effective as that shown by Fig. 8.

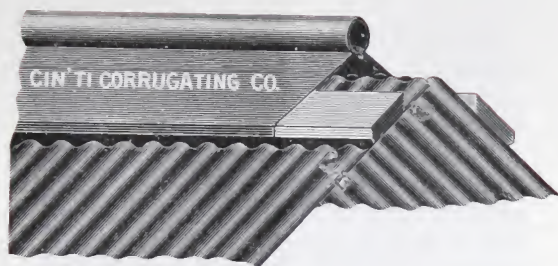
Fig. 11.



Shows our **Ridge Joint** or Corrugated Wood, for $2\frac{1}{2}$ inch corrugations, to be placed between Ridge Cap (Fig. 8 or 10) and Corrugated Roofing, as illustrated by Fig. 12.

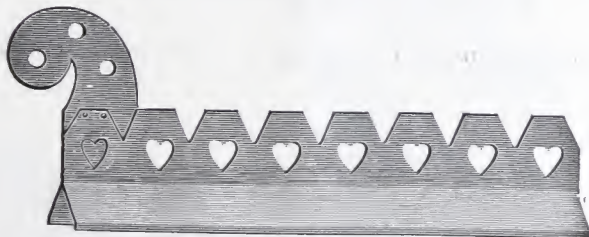
Regular Lengths of Round and Angle Ridge Cap, 6 feet.

Fig. 12.



Showing clearly the practical application of our Iron Ridge Cap and Wood Ridge Joint, demonstrating its usefulness, etc.

For Corrugated Iron Roofs having a pitch of less than 3 inches per foot, it is advisable to use either our Corrugated Ridge Cap, Fig. 9 (which we consider the best), or our Ridge Joint in connection with Round or Angle Ridge Cap, so as to produce a water-proof joint.



The above engraving represents our new **Ridge Cresting**, made in $4\frac{1}{2}$ feet lengths, painted or galvanized. This can be used on a shingle, tin, slate or iron roof—old or new—and lends greatly to the general appearances.

This style of fancy Cresting or Ridge Cap is particularly well adapted for use on private residences, stores, factories, depots, stables, etc., and is quite inexpensive.

Hip Cap.

We make Capping of style Fig. 8 and 10 in two sizes, the smaller being designated **Hip Cap** and used principally for covering hip joints of Corrugated Iron Roofs. Regular lengths, 6 feet.

Ridge Cresting adds materially to appearances.

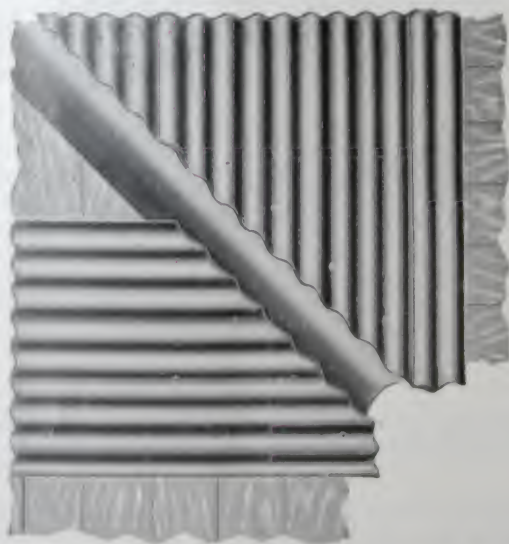
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Fig. 13.



Represents the manner of applying our Corrugated Iron Roofing on a Hip Roof.

Fig. 14.



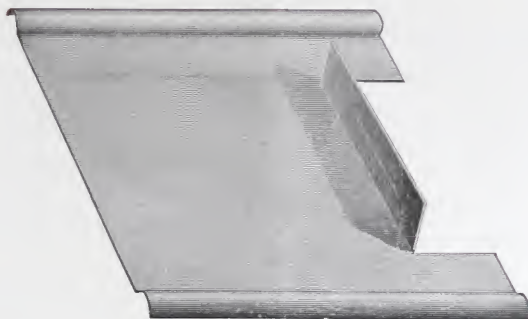
Represents our Corrugated Iron Roofing as applied to Valley of a Roof.

Our Patent Edge 2 1/4-inch Wide Corrugation is best for Roofing.

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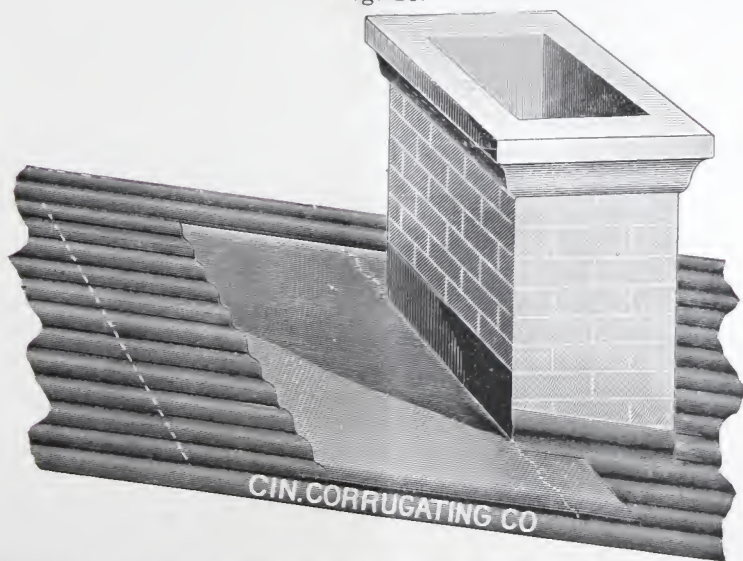
Chimney Flashings.

Fig. 15.



Shows a Flashing for Chimneys, etc., to be made from a piece of flat sheet iron; can be formed when used.

Fig. 16.



This Flashing should run up several inches under the Corrugated Iron, which should stop off from the upper side of chimney far enough to allow rain to escape freely.

The corrugations or crimps at sides of sheet shown in Fig. 15 can be formed over a corrugation of the roofing.

The Corrugated Iron is to be flashed up at the sides of chimney, as shown in Fig. 16. Use cement freely. Counter Flashing may be used where desired.

Nails and Dry Paint always sent unless otherwise ordered.

Instructions for Applying Corrugated Sheets.

FOR ROOFING — WOODEN FRAMING.

The only reliable Corrugated Iron for Roofing, now made, is our Patent Edge $2\frac{1}{2}$ inch Corrugation Sheets—corrugations all *stamped*, not rolled.

Begin to lay sheets from the eaves, the first sheet covering the lower left hand corner, projecting one corrugation over the side, and from two to four inches over the eaves. Hammer the projecting side corrugation down against the edge of sheathing, nailing it in place. Nail across the sheet near the eaves through the tops of alternate corrugations.

Next, place the second sheet to the right of the first, lapping over one corrugation of the first sheet and with the same amount of eave projection.

NOTE.—We recommend that while the roofing is being put on, you use a *continuous* string of thick metallic paint, paste or cement—made by mixing our dry metallic paint with linseed oil—between laps of sheets, to aid in making them watertight: Where this plan is adopted, there can not be the slightest cause for complaint.

Nail through these two sheets where they lap, and directly perpendicularly *through the tops of the corrugations*, and about eight inches apart. (See Fig. 1, page 5.) Nail, also, along the eaves as on the first sheet.

Proceed in this manner from left to right across the entire length of the roof, then begin at the left and lay the second row in the same manner as the first one, allowing the sheets to lap down over the first row three or four inches, according to the slope of the roof and the length of sheets used, applying paste the same as in side seams.

Owing to the exactness of our stamped corrugations, three inches end lap of our sheets is as effective as six inches of ordinary roll corrugated iron.

When nailing across the lower ends of sheets in the second row, put the nails about two inches from the lower edge of sheet in order to have nails pass through both sheets.

Do not put any nails at all through the interior of sheets. Always *drive nails perpendicularly*, and through *tops* of corrugations.

We recommend the use of our Steel Wire Nails, not barbed, two inches long and No. 9 wire.

For Ridge Roofs with slight pitch—unless Corrugated Ridge Cap, Fig. 9, is used—we recommend the use of our Wood Ridge Joint or Corrugated Wood, to be applied at each side of the comb or ridge of roof and over which is to be placed the Iron Ridge Capping. (See illustrations, Figs. 8, 10, 11 and 12.)

If any difficulty occurs in fitting Ridge Joint, saw it in two, cross-wise.

NOTE.—If your worst storms and winds come from the left, you should begin laying roofing at the right hand lower edge and work toward the left, and vice versa.

Use Roll and Cap Roofing for Flat Roofs.

Where the heavy gauges of iron are used, sheathing boards may be dispensed with, *so far as providing support for the iron is concerned*, and purlins substituted, thus economizing in lumber. The maximum spacing of purlins would be for No. 24 gauge, two feet; No. 22, two to three feet; No. 20, three to four feet; and No. 18 or 16, four to six feet. With the lighter gauges, Nos. 26 and Standard Roofing Gauge, we consider it advisable to *use close sheathing* of common stock boards.

For very steep roofs, a lap of three inches at the ends of sheets is ample.

Where the pitch is less than three inches per foot, we recommend the use of our Standing Seam, or our Roll and Cap Roofing. See pages 26 and 30.

For flashing, see remarks under Figs. 16 and 23.

Where hot air, steam or sulphurous fumes will come in contact with the under side of a roof, use our Paraffined Felt Lining between the sheathing and the iron or steel roofing.

When two or more length sheets are used, place the shortest sheets nearest the ridge.

Be careful to lay sheets so that the corrugations of each shall be in line accurately from ridge to eaves.

FOR SIDING — WOODEN FRAMING.

Use either $2\frac{1}{2}$ inch or $1\frac{1}{4}$ inch wide corrugations; the first is preferable.

In planning your structure, arrange height of sides for using regular length sheets, allowing for two inches lap at ends of sheets.

Commence at the bottom, running first row across side, lapping one corrugation at side of each sheet.

Our Patent Edge $2\frac{1}{2}$ inch Corrugations present a paneled appearance.

Be very careful to keep the Edge Corrugations plumb, and in line.

Put up the second row in the same manner, lapping ends of sheets down over the top of the first row—one or two inches is sufficient for this lap.

Where used without sheathing boards, the studding should be framed to measure twenty-four inches from center to center, or, if preferred, put the studding three to four feet apart and nail the sheets to batten strips, placing these strips say two feet apart and across the studding.

Nail siding vertically through the tops of corrugations and horizontally in the valleys of the corrugations.

When studding is used, 2 inch by 4 inch lumber will answer, usually.

Using heavy corrugated iron and dispensing with sheathing boards lessens danger from fire, thereby reducing insurance.

When the liability of injury from outside contact is considerable, a heavier gauge of iron should be used than is otherwise necessary.

Do not let the iron siding have contact with the ground.

Lead Washers are a Useless Expense with our Patent Edge Corrugated Roofing.

Our corrugated iron can be used in various ways as a substitute for cornice work and in a very effective manner, by giving the subject consideration.

A strip of iron corrugated diagonally, or one used with corrugations horizontally disposed, often gives a pleasing effect.

We make **Metallic Weather-Board Siding** and **Beaded Siding**, in sheets 8 feet long. (Full descriptions on pages 35 and 36.)

FOR ROOFING OR SIDING — IRON FRAMING.

The side laps should be riveted every twelve to eighteen inches, or closer, and end laps on every other corrugation.

To fasten the sheets to iron beams and purlins, a cleat of band iron $\frac{3}{4}$ or $\frac{7}{8}$ inch wide should be passed around the purlins or beams and riveted at both ends to the sheet; by contracting or pressing this cleat toward web of beams or purlins, a tight and secure fastening is made which allows for contraction or expansion of the sheet.

Other directions for applying are the same as for wooden framing, for which see foregoing.



The above engravings show several methods for applying Corrugated Iron Roofing to iron roof frame work: Fig. A shows strap iron cleat riveted at each end; Fig. B shows a long wire or clinch nail driven through the corrugated iron and bent around the angle iron; and Fig. C, a bar iron cleat riveted firmly to the corrugated roofing and binding against the flange of Z bar.

When desired by our customers, we furnish cleats, rivets, etc., for fastening by either of the methods illustrated above.

Corrugated Awnings.

Fig. 17, on the following page, represents a favorite style of Permanent Awning of single curved sheets, manufactured and sold very largely by us. It is in extensive use in Philadelphia and other eastern cities, where it is deservedly popular. We will furnish designs and estimates on these Awnings, complete, including iron frames for supports.

Fig. 18 represents our Double Curved Awning; this style may be supported by curbstone posts or by wall brackets.

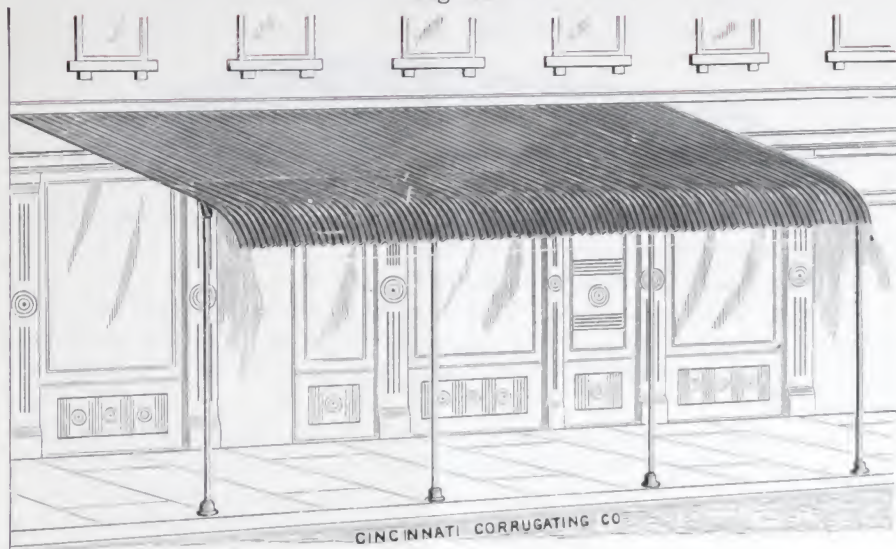
Send us dimensions for an estimate on either style of our Corrugated Iron Awnings, complete, ready to put up.

Special designs of Awnings made to order.

COPYRIGHTED.

Single Curved Awning.

Fig. 17.



Double Curved Awning.

Fig. 18.



Our Rolling Mill and Large Stocks make Promptness Certain.

COPYRIGHTED.

Curved Roofing Sheets.

Fig. 19.



Shows a Corrugated Sheet Curved. These can be curved to any desired radius, within bending capacity of the material.

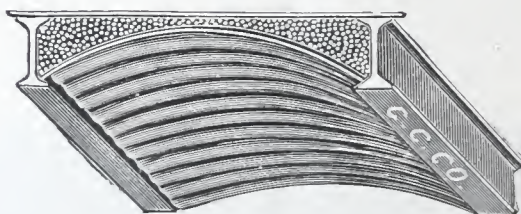
In ordering, give us dimensions as per Fig. 38.

We make these Arches to specifications required, of iron or steel, and give especial attention to exactness in this kind of work, having a large patronage from the leading Architectural Iron Works, Bridge Works, Builders and Contractors.

These sheets are in very general use, for purposes other than those indicated, as they present a handsomely finished appearance, and often save expense in construction; *e. g.*, for Lantern or Ventilator Roofs, Dormer Windows, etc.

Corrugated Arches.

Fig. 20.



Shows a section of Corrugated Iron or Steel Arch, for Fire-Proof Buildings, etc., in which our Corrugated Curved Sheets are used.

Send for our special circulars on Arches.

These sheets rest on the lower flanges of I beams, the space above being filled with concrete to, or above, the top of beams, as desired.

These Arches, for strength, lightness, durability and fire-proof qualities, cannot be excelled.

Corrugated Arches have often been tested, and when No. 18 W. G. has been used, have never shown any deflection at a pressure of 1,000 lbs. per square foot, and very little deflection at 2,000 or 3,000 lbs. per square foot. (Trautwine, page 371, Ed. 1883.)

Regular Lengths of all our Corrugated Sheets 5, 6, 7, 8, 9 and 10 feet.

The weight of the Arches with the concrete filling on top of beams is very little over one-half that of a brick arch and concrete fillings to the same height, thus allowing fewer or lighter beams to be used and lessening the load on the walls.

These floors are from 25 to 40 per cent. cheaper than those made of fire clay, or, in fact, any other fire-proof floor.

Curved Ceilings, when painted suitably, present a very beautiful finish.

The uses of Curved Sheets for Roofing, Ceiling, and other purposes, are infinite; and many will suggest themselves to the reader besides those here named.

Fig. 21.



Shows the full size of our $1\frac{1}{4}$ -inch Corrugations.

This size Corrugation is made, usually, of the lighter gauges and especially adapted for Ceilings, Inside Linings, etc., combining an artistic finish with thorough fire-proof qualities; this size Corrugation presents a neat appearance when used for Siding, but we do not recommend it for Roofing.

With the $1\frac{1}{4}$ -inch Corrugations, our sheets measure 25 inches full width, and will cover 24 inches when lapped one Corrugation at sides.

Our next smaller size of Corrugation is $\frac{5}{8}$ inches wide.

Fig. 22.



Shows the full size of our $\frac{5}{8}$ -inch Corrugations.

This is particularly well adapted for Inside Linings, Ceilings, covering Shutters and Doors, etc.

Where used for interiors, this Iron is usually repainted when in place, to suit the taste of the users; some light color is preferable.

This Iron is easily applied by any ordinary mechanic, without special tools or instructions other than contained herein.

With the $\frac{5}{8}$ -inch Corrugations, our sheets measure 25 inches wide.

We Recommend our Corrugated Roofing for Applying over Shingles.

Our $\frac{3}{16}$ -inch Corrugation.

We make also a very small corrugation, or crimp, 3-16-inch wide, and of very slight depth; sheets usually eight feet long and twenty-six inches wide, and of Standard Roofing Gauge; Corrugations run either crosswise or lengthwise.

This is used largely for fire-proofing Wooden Shutters, Sliding Doors, for Inside Wooden Frame Work, Timbers, etc., etc., for which it is more suitable than plain, flat iron.

This Corrugation is so small that it can be bent crosswise, and indeed used in almost any place where flat iron can.

Actual size of this corrugation is nearly the full size of Fig. 4 as shown.

We always corrugate sheets before painting, thus avoiding injury to paint by the machinery. In the ordinary practice of painting first, the corrugating causes more or less scaling off, which, of course, carries the paint along, leaving many bare patches, which will rust as soon as exposed to the weather.

The appearance of Straight or Curved Corrugated Iron for Mansard Roofs is far superior to that of Metallic Shingles, as the shape and stamping of latter cannot be distinguished unless very close to the observer.

We have facilities for doing various kinds of Corrugating, in special size sheets, for all purposes. Correspondence solicited.

We omit to encumber this issue with references, as our list is too numerous and general, but will name our customers nearest to you on application.

We have patrons in every State and Territory in the Union, and from Canada to Mexico inclusive.

All goods delivered in suitable shipping condition, on board cars, PIQUA, without extra charge therefor, unless in lots of less than eight squares or equivalent.

Let us have complete specifications of what you want, and, as prices vary from time to time, we will make you special quotations at lowest rates current.

Remember that double-worked, box-annealed iron (such as we use) must be most durable, as it will not scale off, carrying the paint with it, as does the common iron used by irresponsible makers.

Model Samples Mailed on Request.

COPYRIGHTED.

Corrugated Flashings.

Fig. 23—A.



Used for connecting Corrugated Roofing with brick walls, adjoining buildings, or other vertical surfaces.

Fig. 23—B.



Used for joining Corrugated Roofing to fire walls or other vertical surfaces at the end of a Roof.

These Flashings apply only to $2\frac{1}{2}$ -inch Corrugations.

WEIGHTS PER 100 SQUARE FEET FLAT,

By which our iron and steel sheets for corrugating are rolled, are for

Standard Roofing Gauge, or No. 27 B. W. G.			64 Pounds.
No. 26 Gauge,	.....	72	"
" 24 "	.....	88	"
" 22 "	.....	112	"
" 20 "	.....	140	"
" 18 "	.....	196	"
" 16 "	.....	260	"

Being Birmingham Wire Gauge, as given in Haswell's Engineers' Book for over forty years, adopted by the National Iron Roofing Association, and used by Phoenix Iron Co., Union Iron Mills, Pottsville Iron and Steel Co., and many other prominent concerns.

We always give full weight iron for Gauge ordered.

Metallic Ceilings.

The use of Iron—Corrugated, Crimped, or Beaded—for Ceiling purposes is somewhat of a novelty, but has proven eminently successful and satisfactory.

Our Iron Ceilings can be applied directly to joists, if latter are level, or to rough sheathing over the joists or over the plaster. In the first case, work is not so rapid as in the second, where sheathing is used, and in some places is not attended with as good results. The advantage in the case of applying iron over plaster is that it can be done without removing the old plaster, and thereby very little dirt is occasioned; besides, it does not greatly interfere with business if the iron is put up in a store or office room. This item of cleanliness, where re-ceiling is necessary, is indeed important.

Builders and all practical men know that it is useless to adopt plaster ceilings in business houses, factories, etc., where there is much jarring or vibration from machinery and handling of heavy goods, for this will soon cause the plaster to fall off. Whenever a very small leak in a roof permits rain to drop down upon the plaster ceilings, it soon causes that portion to loosen and drop off, and it can never be repaired neatly.

Wooden Ceilings, although not subject to the same criticism as above on plaster, are inflammable, apt to shrink, and are not always perfectly dust-proof from above; then the cost is fully as great if a neat pattern is used. Wooden Ceilings are, of course, not so durable as sheet iron materials and are easily combustible.

The weight of Metallic Ceilings, such as we make, is probably not over 20 per cent. of the weight of plaster, so that this item figures conspicuously in preparing frame work for any room of good size, churches, halls, or stores.

Plain Iron Ceilings are but very little more expensive than plaster, while ornamental metallic designs cost no more than paneled wood ceilings, frescoed plaster, or fancy designs in paper.

We always give full instructions for applying the different styles of our ceilings, as the case may require, whether over plaster or to joists or sheathing.

It is impossible for us to convey any true idea of the appearance of our Metallic Ceilings by the use of a wood cut, and the colors and style must always be harmonious to the general surroundings.

We have several different materials adapted for ceilings, and we can send samples whenever desired. We also make special designs for particular rooms, and always prefer to quote prices after accurate dimensions are furnished. Always state height of ceiling from floor, whether the iron is to go over plaster, on joists or sheathing, direction in which joists run, what the room is to be used for, and whether plain or ornamental ceiling is desired, etc.

Protect your Buildings from Fire and Save Insurance.

COPYRIGHTED.

Corrugated Iron Shutters.

Fig. 24.



We make several different styles; heavy flat plate iron, Corrugated iron—single or double thickness—also wood metal covered Shutters. We must have accurate dimensions of each opening.

Send for our Special Circulars on Shutters and Doors.

Measure EACH Opening Separately.

COPYRIGHTED.

Fig. 25.



Corrugated Iron Lath.

Figure 25 represents our Corrugated Perforated Metallic Lath—a superior style of metallic lathing used on fire-proof and other classes of buildings.

The Corrugations afford a rigidity which wire lath and flat sheet iron lath lack; the perforations are of a size large enough to give an adequate key or clinch to the mortar.

Our Lath should be applied horizontally on side walls so that the corrugations may give support to the plaster and the key form stronger.

This lathing may easily be applied to columns, girders and other curved or angular surfaces even better than wood lath. We can furnish it in any regular length, 4, 5, 6, 7 and 8 feet; lengths in stock are 16, 26, 32, 48, 64, 72, 84 and 96 inches; width being 3 corrugations or 4 inches.

We use ordinarily No. 27 Gauge Iron with corrugations $1\frac{1}{4} \times \frac{3}{8}$ inches; can furnish heavier iron on special orders. We can also furnish other widths, either 6 or 9 corrugations, if so required.

Our Corrugated Lath is being used extensively in Government Buildings, there being over 180,000 square feet used in the U. S. Custom House and Post-Office in Cincinnati.

Send for quotations and our Special Lath Circular.

Samples furnished on application.

The Most Rigid and Substantial Lath in the Market.

COPYRIGHTED.

PLAIN ROOFINGS

PAINTED OR GALVANIZED.

Lightning, Water, Fire and Wind Proof.

COPYRIGHTED.

Standing Seam Steel Roofing.

Fig. 26.



SELF-CAPPING AND PACKED.

Sheets as shipped, 96 inches by 24 inches, will cover 93½ inches by 24 inches.

Fig. 27.



DETAILED DESCRIPTION.

We present above an illustration of our improved Metallic Roofing, as applied to Plain Sheets, with which it is principally used.

The novelty and merit of the invention consists in the application of a water-proof packing in the standing seam of the roofing sheets, thus effectually preventing their leaking.

Letter A in the cut represents a sheet of roofing in the position in which it is first laid upon the sheathing; B, a strip of Paraffined Felt, bent lengthwise, and fitted into standing seam of D by us at factory.

The first step in laying this roof is to secure sheet A to the sheathing, which is done by the application of a cleat C, the first curve of which fits over A.

The Cleat is fastened to the sheathing by Steel Wire Nails driven through it at the point of dots shown on the plane of C.

When A and C are thus placed and secured, the upward extension of cleat C remains in the same position as shown in Fig. 27.

6: Sheets of the above to the Square.

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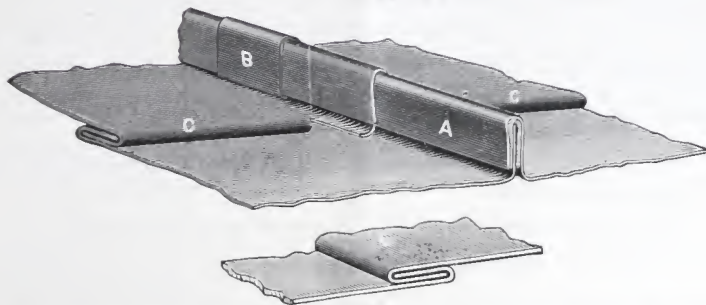
The ready packed Standing Seam of the next roofing sheet D is then placed upon and pressed downward over A and first curve of cleat C.

The upward extension of cleat C is then turned downward over the crimp of D, which fastens the sheet to the sheathing.

It will be observed that the Standing Seam of D thus forms a Steel Cap, integral with the sheet, covering the joints, and that the sheets are held to the sheathing *without being punctured with nails*, the whole being held to the sheathing by the cleats, which may be placed as frequently along the joints as may be required, or say 12 inches apart.

It will also be observed that the sheets require no forming, except at the ends, which are locked in the usual way, as shown at A, Fig. 27, and at C, Fig. 28.

Fig. 28.



We always ship this Roofing with the felt packing fastened securely *in place*, so there is nothing more to do with it in applying the roofing than if it were not present.

This Roofing can be attached to "lath" or to sheathing, but not directly to rafters—for this use our Corrugated or V Crimp Roofing is most suitable.

This Roofing is covered, by thorough *brushing*, with the best mineral paint, which is *reground* in pure Linseed Oil. This renders our Paint the most adherent and permanent in the market.

The Standing Seams, which form the cap, being made from the sheet, can not loosen or blow off.

The Packing fills each joint and closes it effectually against moisture.

Its Weight per square (10x10 feet) is about seventy-five pounds, nearly double the weight of tin, one-third the weight of shingles or gravel, and one-sixth the weight of slate, making it the most desirable roof.

THE VERY BEST SOFT STEEL

Is used in this Roofing. This is made in our Piqua Rolling Mills, every sheet being rigidly inspected, and all imperfect ones are rejected.

The material is painted on both sides with two coats of our Metallic Paint.

No Oil but Linseed will Prevent Rust.

General Directions for laying P. S. S. Roofing.

Commence at the left-hand end of the roof, at the eaves; take the sheet and straighten out the double standing seam or flange, and turn it over and nail against the barge board or flash up against the parapet wall (as the case may be); in latter case counter-flash in usual manner.

Straighten up the single flange with mallet or tongs, so it will stand vertically.

Make joint on upper end of sheet by turning lock with jointer; then place the cleats along the single seam or flange, about one foot apart; then join on another sheet the same way, turn locks at upper ends of sheets up, those at the lower end down. See A, Fig. 27, and C, Fig. 28.

"Break Joints" in laying by using short or half length sheets to start every other course from eaves to ridge.

Nail the ends of sheets down over edge of sheathing at the eaves.

Be sure to place one cleat on each sheet at the point where the cross seam comes.

The locks may all be formed before sheets are sent up on the roof.

Each sheet is snipped, each end $\frac{3}{4}$ -inch in at each side ready for forming locks before shipping.

When the comb or ridge is reached, allow $\frac{3}{4}$ -inch to turn up at the top, which is done by using the jointer, snip the flange $\frac{3}{4}$ -inch, then turn it up and put cleats about one foot apart.

This will finish the first course.

Then lay the next sheet with double flange or seam over the single flange, with the packing in the **n** crimp, press it down and turn the vertical end of the cleat over by hand, snugly, so as to hold it in place; then take the tongs and press it together closely.

Each length of standing seams must be closed at once with tongs as completed.

Avoid pressing the standing seams too close at tops—this is important.

This finishes the standing seams; continue this until this side of the roof is completed.

Be careful to keep standing seams straight in line—you will thus have the hand-somest and most effective work.

Is Price the Only Consideration?

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The other side is laid in the same way, and, at the ridge, when the sheet is to be cut (if not quite long enough add a piece), leave $\frac{3}{4}$ -inch to turn up to form a flange to meet the other side.

After this side is all laid, draw the two flanges together with the tongs; then take small caps, such as shown at B, Fig. 27, and fit them over the two flanges on the comb, bend the end of the cleats over to hold them, and press together by using the tongs.

A hip is made in a similar manner, and valleys are formed by malleting out the double flange and bending it over like \subset with the jointer, then throw the single flange over the same way, and lay this sheet in the valley, cleating it each side; then put the packing in flanges, and hook the roofing sheet into it and force it down to close both sheets, making it water-proof.

Where warm air, steam, or sulphurous fumes will come in contact with under side, use our Paraffined Felt Lining.

We always ship tools and fastenings with orders unless otherwise notified.

We furnish tools for laying this Roof, and charge actual cost for the same, as follows:

Tongs, per pair	\$1 50
Jointer,	50
Snips,	1 50
Wooden Mallet,	25
Total	\$3 75

And will allow the same as charged for them if returned in good condition, freight pre-paid. Always notify us when you return tools, attaching tag to identify them.

We recommend using a wooden mallet instead of a hammer for closing cross seams or locks.

After roof is all laid, mix the dry paint furnished with Linseed Oil, eight pounds to the gallon, and apply with a flat brush.

If any holes are in the roof—caused by laying or miscuts, or flashing corners—work some of the paint into a putty or cement form first, paint the broken places, and then work the cement in.

This will harden and effectually stop all leaks.

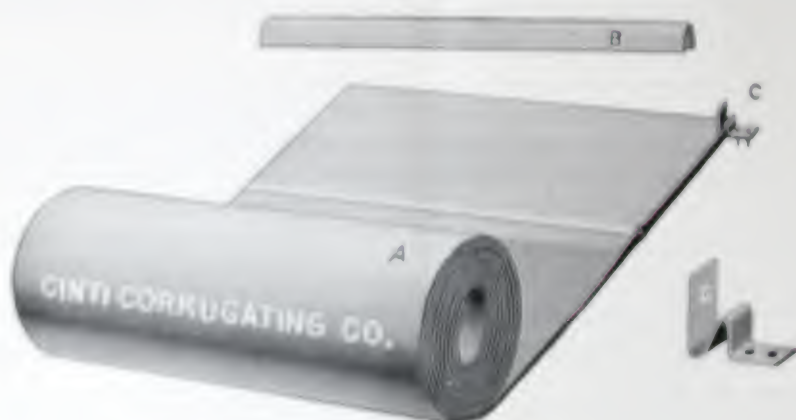
Nails, cleats and extra paint, dry, are all furnished at cost.

Small caps, for ridge roofs only, without charge, if you give us the length of your ridge in ordering.

Our "Patent Edge" is the only Corrugated Iron suitable for Roofing.

Roll and Cap Steel Roofing.

Fig. 29.



The roofs of dwellings, stores and other buildings, having a fall of only one-half inch to one inch per foot, and when the rafters are not shorter than sixteen feet, we recommend the use of our Roll and Cap Roofing, illustrated in the above cut.

The reason this style of roofing is more effective than other kinds for nearly flat roofs, is, that we manufacture it in rolls fifty feet long or more, from sheets which are twenty-six inches wide by eight feet long, and the cross seams every eight feet are formed by us very perfectly with improved machinery, and when the flanges are bent up on each side these cross seams extend up to the top of these flanges, and there is no possible chance for leakage.

Being in rolls, this style of roofing is more convenient to handle on roofs where there is but slight slope in the rafters, as the side seams (which must be turned on the roof) are more easily made when the roof is nearly flat. Hence, when a roof has a pitch of say three inches or greater, or in any case where rafters are shorter than sixteen feet, we recommend the use of our Standing Seam Roofing (Catalogue, page 28) or being equally effective and more convenient to apply, it being in sheets eight feet long by two feet wide, with flanges already formed on sides of each sheet.

At three inches, or greater pitch in the foot, any of our styles of Roofing will be thoroughly effective, including the Corrugated Iron. (See pages 5 and 6.)

Our Patent Edge 3 1/2 inch Corrugated Siding has a Paneled Appearance.

SHUTTLEWORTH & CO.

DESCRIPTION.

The rolls, as usually made, are fifty feet long and twenty-six inches wide, being composed of painted sheets, firmly jointed at ends by our Improved Lock Joint, on our patented machinery, so that the joints can not become detached, or move from their position.

Paraffined Felt Packing is inserted in all cross locks.

If customers request it in ordering, and give exact length of slope to be covered, we will make the rolls of such lengths as will exactly cover the lengths of slopes given, not exceeding one hundred and fifty feet.

This is of great convenience in applying, and a saving of material.

Cap "B," as shown in illustration, with paraffined felt packing therein, also cleat "C," barbed steel wire nails and extra paint, dry, are furnished with this Roofing at ten cents per square.

As this style of Roofing does not require boxing or crating, you do not have to pay freight on heavy wood crates, and it is much easier to handle in transit than roofing in crates.

We wrap each roll of Roofing with heavy paper that will protect the paint from being scratched in transit.

We deliver on board cars at this city without charge, except on very small orders, when the drayage will be added.

Directions for Applying Roll and Cap Roofing.

For use of our Roll and Cap Roofing it is best that the rafters be sheathed over entirely.

Commence at either side of roof, turning down the outer edge of the Roll, and nail to the face board or flash up against the wall, as the case may be.

Turn up the other edge of the Roll with the edging tongs, forming a flange one inch high for general cases.

We, as a rule, send out tongs for one-inch flanges, but can furnish them for one and one-fourth and one and one-half inch flanges if requested, for use on extremely flat roofs.

The same kind of flanges to be turned up on each side of each strip of roofing as the work progresses.

Nail the cleats down to the sheathing at intervals of about twelve inches along the flanges of Roll first laid, so there will be a cleat at center and end of each cap, and after forming the flanges on the next Roll, place it so that the flanges of the two strips touch, and are in a *straight* line.

Nothing is Really Cheap unless Effective for its Intended Use.

Before laying the next Roll, commence at eaves and put the cap "B" over the two adjacent flanges, and as each piece of capping is laid, put the next piece of cap in place, lapping it about one inch down over the first piece as before, continuing to the ridge.

Next, bend the vertical tongues of the cleats "C" over the caps and flanges tightly, by hand, proceeding to *at once* close up the joint perfectly tight with the tongs sent for that purpose.

When one side of a ridge roof is covered, nail cleats to sheathing twelve inches apart along flange at the ridge, before laying the opposite side, for use in fastening ridge caps.

The Roofing must be nailed over the edge of the eaves, and must be flashed up one inch each side at ridge, the flanges so formed to be covered by the same kind of caps as used previously on side seams, attached with cleats as before explained.

Hips are to be formed on the same principle, after the sheets are cut to fit—allowing enough to turn up for flanges along the hip.

Valleys are to be connected with the Roofing by a flat seam, similar to that used in locking the ends of the sheets. Fig. 28.

Where warm air, steam, or sulphurous smoke will come in contact with under side, use Paraffined Felt lining.

SPECIAL TOOLS TO BE USED.

One pair Edging Tongs,	\$2.50
One pair Tongs for closing caps,	1.50
One pair Snips,	1.50
Total cost,	\$5.50

We always send these tools, also caps and fastenings, unless we are directed *not* to send them; but will remit charge for tools promptly on return of them to us in good order, freight prepaid.

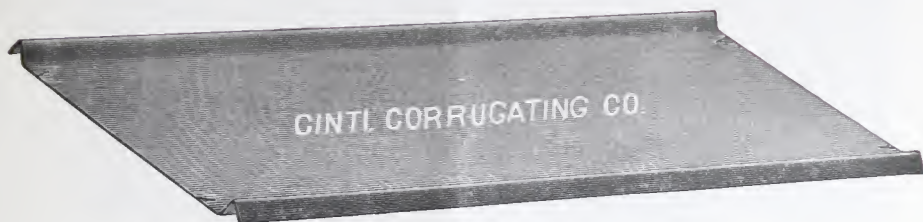
In addition to the above described excellent pattern of Roofing, we are prepared to make other Roll and Cap Roofings.

Operating our own Tin Plate Works, we are also making our Roll and Cap Roofing, 20 inches wide and 50 feet long, of our "PIQUA" brand of Roofing Tin Plate.

Repaint Metallic Roofs Every Two or Three Years for First Six Years.

Standard V Crimped Iron Roofing.

Fig. 30.



Regular Sheets carried in Stock are 8 feet long and 2 feet between Centers of Crimps, covering 93½ inches by 24 inches.

We also make to order 6 and 10 feet lengths.

This style of Roofing has been in use probably as long as any other style of Plain sheet-iron roofing, and has made for itself an enviable reputation.

It may be applied to sheathing boards or lath, or directly over the old shingles without removing the latter, the same as shingles or our Standing Steam Roofing, but, since the nails are driven directly through the roofing sheet, a wooden Δ strip and sheathing, it can be fastened down more firmly than some other styles of plain roofing, and is therefore very favorably received in those parts of the country where high winds are of frequent occurrence.

It can also be readily and successfully applied directly to rafters. This form of construction is very economical of lumber, but for securing the greatest durability we recommend that close sheathing be applied to the rafters and the Roofing sheets fastened thereon.

All sheets are snipped at ends, ready for turning end locks, before shipping.

As shown by the above cut, each sheet has a crimp in Δ shape formed on each side, all ready for applying.

In placing the sheets on the roof these crimps lap over each other and also over a triangular strip of wood which serves to support the joints firmly.

We recommend the use of our Steel Wire Nails 1¾ inches long, so that the nail, after being driven through the two edges of iron sheets and the wood Δ strip, is long enough to reach ¾-inch into the sheathing.

Afterward, Every 4 or 5 Years, using only Pure Linseed Oil Paint.

Fig. 31.



The above cuts explain how to nail sheets down and how two sheets are spliced or hooked together to make any length desired; of course for long rafters it may be necessary to hook together some three, four or five sheets or more. This to be done as explained on pages 28 and 29.

For making tight joints at ridges of comb roofs, it is best to use our small size Capping, illustrated in Figs. 8 and 10 of Catalogue, (for prices see list.)

When applying this Roofing, always allow the roofing sheets to project one inch over the eaves, and then bend this projection down against the wood framework, nailing it fast to prevent wind and water blowing underneath.

We can not recommend V Crimp Roofing to be used where the pitch is less than two inches to the foot; for nearly flat roofs we suggest the use of our Standing Seam Roofing, or Roll and Cap Roofing. (See pages 26 and 30.)

This Roofing being applied without the use of cleats or other patent fastenings, is most simple and easy in its application, and is, therefore, often preferred by farmers and others who can not employ regular mechanics.

Where warm air, steam or sulphur will come in contact with the under side of Roofing sheets, use our Paraffined Felt Lining.

The tools necessary to properly apply this Roofing are:—

Pair Tinners' Snips,	\$1.50	} These charges are actual cost.
Turning Iron (or Jointer,)	50	
Wooden Mallet,	25	

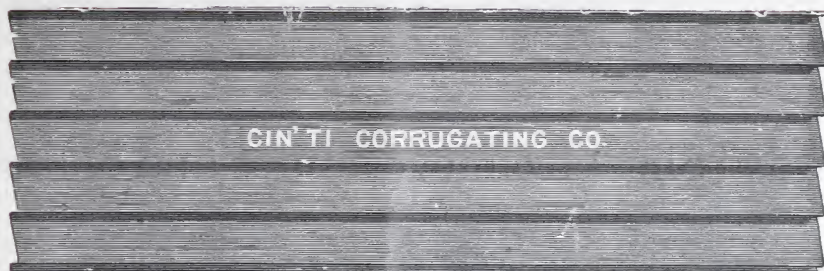
We always send tools, wire nails, V wood strips and dry paint unless otherwise notified when ordering.

We will remit the amount charged for tools if they are returned to us in good order, freight prepaid. Always notify us when you return tools, and mark their shipping tag with your name.

Investigate, then order from the most reliable makers.

Iron Weather-Boarding.

Fig. 32.



Regular sheets as shipped are 8 ft. long, having 5 faces or "boards" of 4 1-2 inches each ; covering width of sheets 23 inches.

As an effective and fire-proof substitute for wooden weather-boarding or "clapboards," our iron sheets formed in imitation of them, as shown by the above engraving, are attracting general attention and meeting with perfect success wherever used.

To all who desire a fire-proof building, the necessity of using Iron Siding is apparent, and our iron sheets of Weather-boarding have been found to supply the want admirably.

This Weather-boarding is made of good, strong iron ; and we paint both sides, before shipping, with our iron-ore paint of a red color, but we suggest, in repainting the iron after it is put in place, to use a stone or slate colored paint, thus adding much to its general appearance.

This material can be attached to rough sheathing boards or directly to studding placed 16 inches apart between centers.

In applying our Weather-boarding, it is necessary to lap the sheets one crimp at sides and 1 or 2 inches at ends. Place nails about 4 to 6 inches apart along the horizontal laps when the iron is put on sheathing, and immediately under the projecting crimp always. When applying to studding, nail to each stud. At vertical laps place one nail at the uppermost edge of each face or "board."

Place a few nails throughout the body of the sheet so as to hold it firmly against the studding or sheathing.

All nails must be driven directly under the projections to avoid indenting the iron.

No special tools are required in putting on this iron, and any ordinary mechanic can do the work well and neatly if ordinary caution is used to keep the lines straight horizontally. *This is important.*

Our Painted Sheet Metal can be soldered after scraping the surface bright.

We make a special Angle Strip of iron to be used with this material at the corners of buildings to cover the edges of the weather-board sheets and make a neat finish. This must be ordered specially.

In ordering Iron Weather-boarding it is always best to furnish us with a pencil sketch, with figures showing accurate dimensions of spaces you wish to cover. (See enclosed order blank.)

Beaded Sheet Iron for Ceilings and Siding.

Fig. 33.



Regular sheets measure 25 inches and cover 2 feet in width, and are 5, 6, 7 and 8 feet long; regular length carried in stock, 8 feet.

Each of the nine crimps in our Beaded Ceiling Iron is $\frac{1}{2}$ -inch wide, and, being three inches apart center to center, each sheet covers 2 feet in width on the ceiling after lapping over one crimp at sides of sheets.

It is our usual custom to make, and carry in stock at all times, sheets 8 feet long, and of Standard Roofing Gauge, and unless otherwise specified, we will ship this size and gauge with all orders placed with us.

The style of Ceiling is very desirable in stores, warehouses, factories, engine rooms, boiler rooms, cotton gins, paper mills, etc., where it is necessary to have a fire-proof and durable ceiling and siding.

Beaded Iron Ceiling can be applied directly to rafters, studding, or over plaster; but it can be put on to sheathing boards more easily and quickly, besides presenting a better appearance.

When desired, we can get up special designs for Ceilings of Beaded Iron, with paneling strips, molding, ornaments, etc., the same as for Corrugated Iron.

In our Factory, every detail is carefully supervised.

COPYRIGHTED

No special tools are required to apply this Beaded Ceiling.

The sheets should be lapped one or two inches at ends, and over one crimp at sides.

Whenever desired, we will estimate total cost of ceiling any room, if pencil sketch is sent to us with accurate dimensions marked thereon.

Our Beaded Sheets can be cross striped with paint to imitate brick.

Guttering and Conductor Pipe

Of either Tin or Galvanized Iron we can furnish of ordinary patterns at lowest prices. We manufacture these goods for the convenience of our customers who desire to purchase their Guttering, etc., from same party as their Roofing.

We are also prepared to have

Galvanized Iron Cornice

Made to order, and if furnished with drawings and specifications will take pleasure in quoting prices upon application.

We desire to call the attention of Farmers, and others interested, to our

Improved Rain and Fire Proof

Hay Rick Covering,

Made of Corrugated Iron sheets fastened together by means of bolts and iron buttons, and held firmly in place by iron hooks running into the Hay which are then secured to the lower edges of the sheets. It is easily put together and taken down and will last for 10 or 15 consecutive seasons. This roofing shelters the Hay from rain and the weather, and Hay so protected sells at an advance of \$1.00 to \$2.50 per ton.

This style of Hay Rick is extensively used in England.

Send for our special illustrated circular.

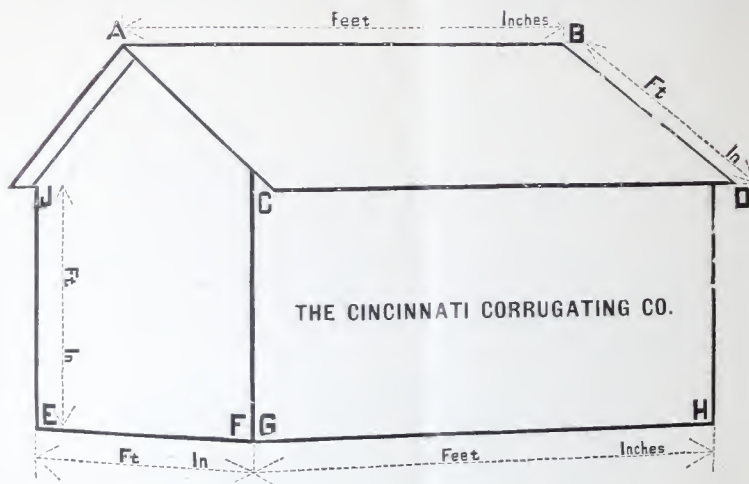
Felt Roofings are not Durable or Cheap at any Price.

HOW TO ORDER ROOFING AND SIDING.

(USE LOOSE SHEET ENCLOSED HEREWITH.)

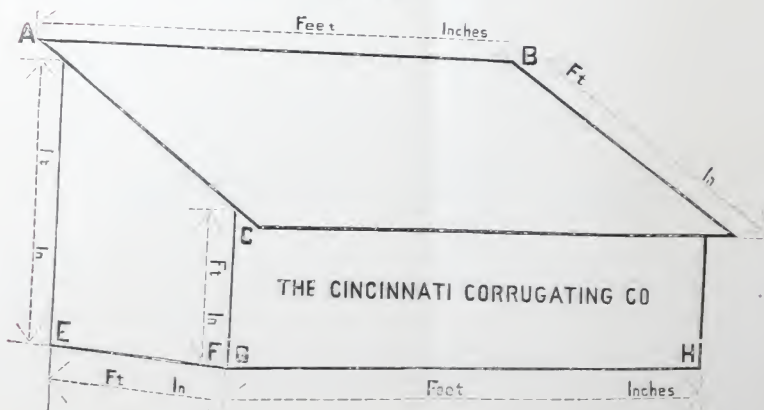
For Ridge Roof Building, furnish us dimensions indicated per

Fig. 34.



For Shed Roof Building, furnish us dimensions indicated per

Fig. 35.



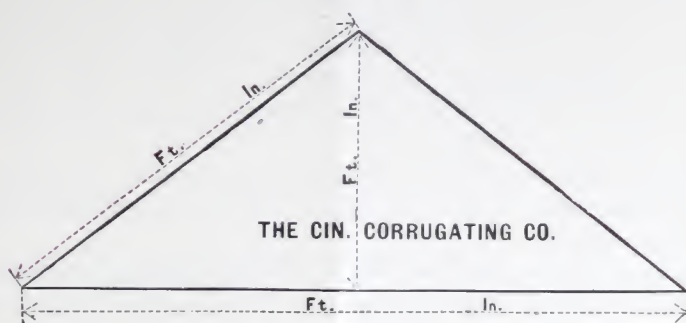
Allowing in above cases for necessary projection at eaves, ends, etc.

Allow Corrugated Roofing three inches Pitch, or more, to the foot.

COPYRIGHTED

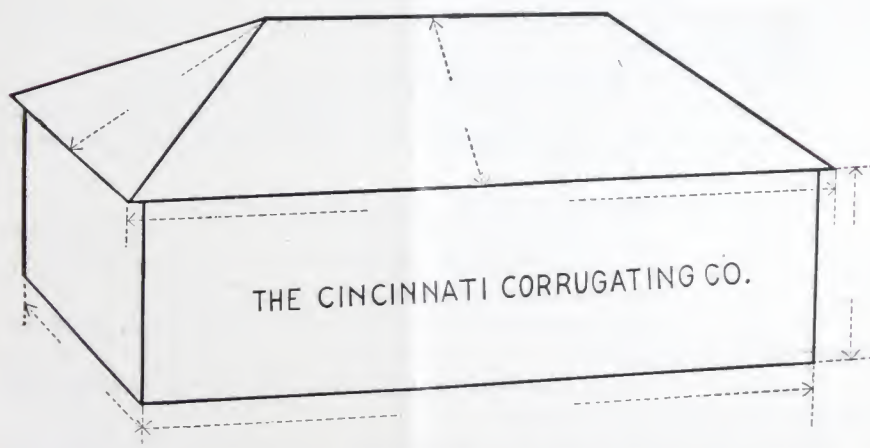
For Gables, furnish us dimensions as indicated per

Fig. 36.



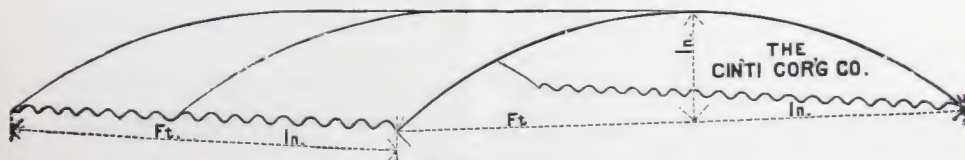
For Hip Roof, furnish us dimensions indicated per

Fig. 37.



For Curved Sheets, *always state whether for Roofing or Ceiling*, and furnish us dimensions indicated per

Fig. 38.



Allow for projections, if for Roofing.

If for Ceilings, state exact distance between webs of I beams, lengths and number of spaces to be covered.

Prompt shipment of orders our specialty.

If you want us to cut it to fit round openings, the latter must be exactly located by figure showing distance from said openings in two different directions, at least, as well as the size of the openings.

Remember that we cut Iron to fit *up to* the openings indicated, hence your dimensions of openings must include frames.

Unavoidable waste, in cutting special orders from stock, is invariably charged at full price, and cost of cutting added.

If ordered about two weeks in advance, and in quantity to justify, we can often have special sizes rolled as required, without extra charge, saving much waste and extra labor.

Please note that we *must* have detailed *figures*, showing dimensions on all drawings and sketches of surfaces to be covered, and especially when any cutting is desired.

We can not attempt to execute an order from a drawing or sketch merely made to scale, without figures, as even the slight difference, almost unavoidable, between two persons measuring the most accurate drawing will produce a misfit in cutting special orders.

We rarely find drawings accurately made to the scale indicated.

Owing to the form of our Patent Edge Corrugations, it requires at least four per cent. less of our Corrugated Iron to cover a square than that of other manufacturers. See pages 5 and 6.

We furnish Corrugated Iron black, painted and galvanized.

We rarely have calls for black, or unpainted iron, however, as it has become generally recognized that, for the best protection of the metallic surface, no moisture must be allowed to come in contact with it before painting.

In shipping before painting, the iron incurs great risk of becoming wet, rusted, and thereby injured.

In painting, we use the best Metallic Paint, *thoroughly reground with pure Linseed Oil in stone mills by steam power.*

Before painting, every sheet is rigidly inspected, and rejected if found imperfect.

We paint all sheets two coats, thoroughly applied by brushing.

Inferior methods and materials are not effective or cheap at any price.

Our paint will not fade, crack or scale off; impervious to water and proof against fire sparks; has a nice finish and a handsome color.

The quality of the original coating is far more important than that of subsequent repainting, and the latter will be required much earlier and oftener if the factory painting is inferior.

Corrugated sheets provide for contraction or expansion without warping or displacing themselves.

There is no solder to crack off with the heat as with tin roofing.

We manufacture the greatest variety of Fire-proofing Materials made.

Ours is the cheapest covering, considering its lasting qualities.
It never wears out if kept properly painted.
It is easier to put on than any other metal covering.
Any one who can drive a nail can attach it.
It can be taken off and moved from one building to another.

General Advantages of Iron and Steel Roofing.

OVER SHINGLES.

Shingles were once made of the best selected timber, and lasted longer than now; they are now made mostly of limbs, old cuttings, and such inferior timber as can not be used for anything else; are short-lived at best, also frequently leak, and are easily combustible.

The average life of shingle roofs is now ten years, and in towns where coal is used, much less.

Insurance is about one-third less in case of an Iron or Steel Roof.

OVER SLATE.

Slate roofing is very costly, all things being considered.

Slate roofing will crack by freezing and thawing, and from heat of adjacent fires, or when walked upon will break and slide off.

Six or seven times as heavy as iron, it requires a strong and expensive structure to bear it up, and an extreme pitch, which makes a large amount of surface.

Slate often causes a building to settle out of shape, and the rule of measurement is always greater than for Iron Roofing.

There is great loss from breakage in using slate.

OVER PAPER OR FELT.

The many varieties of prepared Paper and Felt Roofings, now offered, answer for service of 6 months to 1½ years on temporary structures, but are not adapted for permanent roofs. The cost is about $\frac{2}{3}$ that of Iron or Steel Roofing, but it does not last one-tenth as long, usually,—therefore, is it not poor economy in buying that material?

We always Corrugate Sheets before Painting.

General Advantages of Iron and Steel Roofing.

IT IS RUST PROOF.

Cost less than tin, slate, or shingles, and will outlast any of them.

The saving in insurance will pay the difference in a very few years, between this and the cheapest roof that can be put on.

It is suitable for all kinds of roofing, and can be laid where any other roof can, and is effective at one inch fall to the foot — although *a good pitch is good for any roof.*

Our methods of forming the joints are acknowledged by all to make the best, the simplest, and most flexible joint ever invented.

This is evidenced by the favor with which it is received by architects, builders and mechanics, wherever it has been introduced.

Our seams have sufficient flexibility to equalize all expansion or contraction.

None but the very best Refined Iron and Steel is used in our Roofings.

This we manufacture especially for our own use; all imperfect sheets are rejected.

CISTERN WATER.

Those using the water from any of our Roofings will be pleased to find how much cleaner the rain-water is than from a shingle or gravel roof—both very retentive of dirt.

Iron Roofing, having a smooth surface, the wind keeps it clean from all dirt, leaving none to wash into the cistern.

Our paint, being made from pure oxide of iron and linseed oil thoroughly reground together, is not injurious to water in the slightest degree.

LIGHTNING.

Few persons realize the protection afforded during a violent thunder storm by being in a building covered with iron.

Prof. Mitchell and other scientific men say that it is impossible for a building to be *struck* by lightning when covered with iron.

The great surface exposed dissipates the electricity. Lightning is only dangerous when concentrated.

Iron Steamers have never been known to be harmed by lightning.

HOW LONG WILL IT LAST?

Everyone knows that as long as iron does not rust it will last, and if it is kept painted it will not rust.

There never is any wear on the under side to take the paint off, and if the upper side is painted every two to four years, we do not see anything to prevent its lasting fifty years, or more.

See our special circular on the "Life of an Iron Roof."

Our Uniform Covering Widths are proving exceedingly popular.

Official Certificates.

CINCINNATI, O., February 28, 1885.

TO THE CINCINNATI CORRUGATING CO.

Gentlemen :—My experience fully sustains the justice of the fire laws of Cincinnati, and the usage of the Insurance Companies doing business in our city, viz., in ranking Corrugated Sheet Iron with brick or stone for practical efficiency against fire.

JOSEPH BUNKER, Fire Marshal.

ST. LOUIS, October 19, 1878.

TO WHOM IT MAY CONCERN:

We, the undersigned, certify that, in our opinion, based upon experience, the corrugated iron buildings are as fire-proof as structures built of brick or stone, for the following reasons:

When wood is used as a framing for the corrugated iron buildings, its quantity is so small that it is insufficient to feed a conflagration, and when consumed, the iron still remaining in sheets, falling upon the fire, forms a shield, thus preventing the communication of the flames to adjoining buildings, while a brick wall crumbles and allows the flames to go in every direction. A whole town constructed of buildings covered with corrugated sheet iron, taking fire, would burn with less rapidity than brick structures, and, beyond doubt, no faster. We have these buildings in St. Louis, and no difference is made in the insurance between them and brick structures.

C. T. AUBIN, Civil Engineer,

Secretary St. Louis Board of Underwriters.

H. CLAY SEXTON, Chief Fire Department, St. Louis.

STATE OF MISSOURI, } ss.
CITY OF ST. LOUIS, }

BE IT REMEMBERED, that on this 19th day of October, 1878, personally appeared before me, C. T. Aubin, Secretary of the Board of Fire Underwriters of the City of St. Louis, and H. Clay Sexton, Chief of the Fire Department of the City of St. Louis, who are personally known to me to be the same persons whose names are subscribed to the foregoing statement, and being by me first duly sworn, each for himself upon his oath, said that said statement was true to the best of his knowledge and belief, and that the signature hereunto appended was his true and genuine signature.

In Witness Whereof, I have hereunto set my hand and seal, at the City of St. Louis, this 19th day of October, 1878.

[SEAL.]

J. P. DAWSON, Notary Public.

PITTSBURGH, PA., August 20, 1890.

CINCINNATI CORRUGATING CO.

Gentlemen :—We have prospects of a good deal of Corrugated Iron Work, and knowing through experience that your iron is the best we ever used, and being easy to keep a roof straight, as the sheets are always nice and square, I thought I would write for your Price List, which we have received.

PITTSBURGH ERECTING CO., Pittsburgh, Pa.

Our Sterling Goods make Steady Customers.

COPYRIGHTED.

Piqua Pure Paints.

All of our painted Roofings are coated thoroughly on both sides with our superior Metallic Red Paint.

This Paint has proved to be the best Roofing Paint in the world.

It is made by time-tried methods, approved by the longest experience, consisting of the best Metallic Paint thoroughly reground in pure Linseed Oil, in a stone mill, operated by steam power.

It is especially adapted as a protection to iron, tin or wood.

Apply the third coat after the roof is put on, and it will last for years without deterioration.

All imperfect Roofing sheets are rejected by us before painting.

Our drying rooms alone have 18,000 sq. ft. floor space, so that we carry an assortment of about 500 tons of Painted Iron constantly, hence can furnish you Painted Iron thoroughly dry, without necessity of using excessive dryers and thinners, which greatly lessen the durability of the paint.

No real substitute for Linseed Oil has ever been discovered.

Piqua is next to the largest Linseed Oil producer in the United States.

We quote **Metallic Red Mixed Paint**, under 5 gals., \$1.00 per gal.; under 10 gals., 90 cts.; under 20 gals., 80 cts.; bbl. lots, 75 cts. per gallon. Write us for discounts.

DIRECTIONS FOR APPLYING OUR METALLIC PAINT ON OLD METALLIC ROOFS.

First clean off the roof, removing all scaly paint or other matter, so that the surface may be firm and clean. Look carefully for all holes, broken seams, etc.

If none, proceed to paint, rubbing the paint out well as you apply it. If any breaks in joints or seams, mark them with a scratch awl. Mark all holes made by rust or nails. Then coat each place with the paint.

Take good cotton unbleached muslin, tear in strips large enough to cover one inch each side of the break. Take a trowl and spread the cloth with our Cement Paint. Then lay it over the broken place, patting it down firm and smooth.

Put a small lump of Cement Paint into all the rust and nail holes, and paint lightly over it.

Treat leaks around chimneys, flashings, or skylights same as broken seams. Then paint the whole surface.

Keep the paint well stirred, and rub it out well. No dryer is necessary.

If paint is too thick, add one quart of boiled linseed oil to the gallon.

This can also be used for painting any kind of metal or wood which is exposed to the weather.

We are the Only Makers of Stamped Corrugated Sheets.

Juniata Galvanized Sheets.

"PIQUA" BRAND.

During the past year we were compelled to double the output of our Galvanizing Works to meet the increasing demand for our JUNIATA or "BEST BLOOM" Galvanized Sheets and enable us to maintain our reputation for prompt shipment of all orders.

Our present equipment enables us to offer our goods without hesitation and to guarantee each and every sheet as strictly first class and equal to the very best in the market—uniform in quality and finish—each sheet leveled.

We carry a large and well assorted stock on hand constantly.

Roofing Tin Plates.

TRADE "Piqua" MARK

Last year we completed our plant for the manufacture of Roofing Tin Plates, and are now in the market with a strictly first-class article of Terne or Roofing Tin Plate of purely American manufacture, equal in every respect to the best imported tin.

Every sheet is smooth and level, while the quality is the best and always uniform.

We guarantee every sheet to be perfect.

I C. 20 x 28 full weight and squared.

I X. 20 x 28 full weight and squared.

I C. 20 x 28 old style hand-dipped, stamped and resquared.

I X. 20 x 28 old style hand-dipped, stamped and resquared.

WE USE PALM OIL PROCESS EXCLUSIVELY.

Every Sheet Guaranteed.

COPYRIGHTED.

National Iron Roofing Association Rules.

At a meeting of the above organization, held at Cincinnati, Ohio, March 23d, 1887, the following resolutions were adopted as the uniform rules for measurements and weights of this Association, taking effect April 1st, 1887; re-affirmed January, 1888:

STANDING SEAM AND ROLL AND CAP.

Resolved, The *rules of measurement* in selling STANDING SEAM Roofing shall be as follows: When shipped as Sheets, the full length of Sheets shall be measured *with end locks turned or considered as turned*; when shipped in Rolls, with the Sheets locked together, the running length of the Rolls shall be measured together with the *actual covering width* of the Sheets or Rolls.

CRIMPED EDGE.

Resolved, The rule of measurement for V or CRIMPED EDGE Roofing shall be as follows: The *full length* of Sheets shall be measured, without any allowance for end locks or laps, together with the *actual COVERING WIDTH*.

CORRUGATED AND BEADED.

Resolved, The rule of measurement in selling CORRUGATED Roofing, Siding, or Ceiling, and BEADED IRON Siding and Ceiling shall be the *full measurement after being corrugated or beaded*, no allowance being made for either side or end laps.

SMALL CORRUGATIONS.

Resolved, That CORRUGATED IRON of less than 2 in. corrugation, and all IRONS CORRUGATED CROSSWISE of Sheets, be sold at not less than *five per cent. advance* over price of regular corrugated.

NAILS, ETC.

Resolved, That in *no case* shall NAILS, PAINTS, PAPER FELTING, WOOD STRIPS, or TOOLS be furnished *free* with Roofing, *but shall be charged for* as additional items in the Bill of Roofing.

PRICE LIST.

Resolved, That the following be the Price List of the members of the Association on Painted Roofing:

Standard Roofing Gauge, "Roll Cap" Roofing, per square,	\$4 25
" " " Standing Seam " " "	4 00
" " " Crimped Edge " " "	3 75
" " " Beaded Siding and Ceiling, per square,	3 75
" " " Roll Ridge Capping, per lineal foot, 10c.	
" " " A " " " " " " 8c.	
Standard Roofing Gauge, Corrugated, per square,	\$3 75
No. 26, " " " " " "	4 00
No. 24, " " " " " "	4 75
No. 22, " " " " " "	5 75
No. 20, " " " " " "	6 75

All orders less than 8 squares, package and drayage *extra*.

Try our Patent Edge Corrugated Sheets—Painted or Galvanized.

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Terms.

We are sometimes favored with orders from those who are not engaged in mercantile affairs, or so recently commenced that they are not reported by the Commercial Agencies—R. G. Dunn & Co., or The Bradstreet Co.

While such buyers often prove to be most thoroughly responsible, yet our rule is, in executing orders from customers not favorably rated by the Commercial Agencies or not furnishing satisfactory references, to make shipments to our own order, and to send Sight Draft with Bill of Lading attached thereto, through Bank or Express for collection.

An itemized Invoice for the goods, in such cases, is mailed direct to the Customer, together with a letter of advice, stating the total amount of our Draft and the name of the Bank through which we have drawn.

The Bill of Lading is, of course, full evidence of shipment of materials in good order, and we guarantee them to be first class and as represented in Invoice and Bill of Lading.

To make this method even more satisfactory, we authorize the Bank to hold our Draft until arrival of goods **when our customers request them to do so.**

We will be pleased to have Customers inform us, when ordering, to what Bank they prefer Draft sent for collection.

NOTICE.

We do not imitate other manufacturers, and respectfully ask that others will not copy our illustrations and verbiage, thus avoiding legal punishment under the United States Law.

Try our "Piqua" Roofing Tin.

COPYRIGHTED.

Responsibilities of Common Carriers.

We beg to submit the following information relative to the responsibility for damages to goods during transportation :

If goods be ordered to be sent by railroad, steamer, vessel, express, or canal, and the seller delivers the goods to such carrier, taking a receipt for the same from said carrier, stating that the goods were received in good order, all responsibility of the seller ends there. If such goods are damaged *en route*, the railroad or vessel is liable for the same. If any claim for damages is made, and can not be adjusted without suit, the courts should be resorted to. But the buyer, only, can bring suit, because he owns the goods. The seller lost all ownership in the property when he delivered it to, and took the receipt for the same from, the railroad or other common carrier. If this simple fact were fully understood, much correspondence and unkind feeling would be saved.

The responsibility of transportation companies is broad and comprehensive. If goods be damaged, except through extraordinary circumstances, the companies are liable. Even when a transportation company prints or writes on the receipt given, "not accountable for breakage," it is just as liable for damage if the goods be broken.

No greater folly is committed than for a buyer of goods to refuse to pay for them because they do not reach him promptly or because they are damaged in transit, when he holds a duplicate receipt for them, showing they have been shipped by the seller as ordered. We send duplicate receipts with every invoice.

Let it be remembered, that goods sent as directed, and receipted for in good order, are at the risk of the purchaser; and that the railroad or other conveyance by which they are forwarded is responsible to the purchaser for all damages and all unnecessary delays.

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